

## Chapter 9 Plate Tectonics

**Section 9.2 Sea-Floor Spreading**

*This section discusses sea-floor spreading and subduction zones, and evidence for sea-floor spreading.*

**Reading Strategy**

**Identifying Supporting Evidence** Copy the graphic organizer. After you read, complete it to show the types of evidence that supported the hypothesis of sea-floor spreading. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.

Evidence	Hypothesis
a. _____	
b. _____	
c. _____	

**Exploring the Ocean Floor**




*Match each definition with its term.*

Definition	Term
_____ 1. system that uses sound waves to calculate the distance to an object	a. sonar
_____ 2. deep faulted structure found along a divergent boundary	b. rift valley
_____ 3. elevated seafloor along a divergent boundary	c. oceanic ridge

**The Process of Sea-Floor Spreading**

4. Circle the letter of the description of a subduction zone.
- where an oceanic plate is forced beneath a second plate
  - where an oceanic plate grinds past a second plate
  - where a continental plate grinds past a second plate
  - where an oceanic plate moves away from a second plate

**Chapter 9 Plate Tectonics****Evidence for Sea-Floor Spreading**

5. \_\_\_\_\_ has occurred when rocks formed millions of years ago show the location of the magnetic poles at the time of their formation.
6. Is the following sentence true or false? When magnetic mineral grains in a rock form, they become magnetized in the direction parallel to Earth's existing magnetic field. \_\_\_\_\_
7.  Circle the letter of the statement representing some of the strongest evidence of sea-floor spreading.
- a. Similar fossils are found in North America and Europe.
  - b. Earth's magnetic field periodically reverses polarity.
  - c. Strips of alternating polarity lie as mirror images across the ocean ridges.
  - d. Evidence of glaciation occurs on land in tropical and subtropical regions.
8. Circle the letter of the definition of reverse polarity.
- a. the loss of magnetism by iron-rich mineral grains when heated
  - b. the gain of magnetism by iron-rich mineral grains when cooled
  - c. what rocks that show the same magnetism as the present magnetic field have
  - d. what rocks that show the opposite magnetism as the present magnetic field have
9. Is the following sentence true or false? Deep-focus earthquakes occur away from ocean trenches within the slab of lithosphere descending into the mantle. \_\_\_\_\_
10. Where do shallow-focus earthquakes occur relative to ocean trenches? \_\_\_\_\_
11.  Circle the letter of the location of the oldest oceanic crust, according to ocean drilling data.
- a. near the edges of continents
  - b. at the ridge crest
  - c. between the continental margins and ridge crest
  - d. deep in the asthenosphere
12.  Circle the letter of the location of the youngest oceanic crust, according to ocean drilling data.
- a. at the continental margins
  - b. at the ridge crest
  - c. between the continental margins and ridge crest
  - d. deep in the asthenosphere